Rev	Date	Info - revised items in **RED**
A	20.02.20	Tender Issue
B	30.06.20	Tender Clarifications
0	22.11.10	Construction Issue
1	02.12.20	Colour sample added for Planning

M21 Insulated Render

To be read with Preliminaries/ General conditions.

101 Descriptive Works

a) For design and general performance requirements, refer to Section A of the Specification. Specific performance requirements are provided in each trade section.
b) Complete the Detailed Design, manufacture, supply, install and warrant the works whilst complying with the visual intent indicated on the Design Drawings and criteria stated in the Specification.
c) Where no material, product or supplier is indicated in the Specification, propose suitable materials and systems prior to Contract award which comply with the visual intent and performance criteria stated and remain fully responsible for the Detailed Design of the works.
d) Where a particular material, product or supplier is indicated in the Specification, such material, product or supplier shall be deemed indicative representing the Architect's design intent only. The Contractor may complete the installation using that product, or such other confirmed as equal and approved, but shall remain fully responsible for the Detailed Design and performance of the works.

102 Scope of Works

This section of the Specification, when read in conjunction with the Design Drawings, provides particular requirements with respect to the following:
External Insulated Render.

103 Particular Interfaces
a) Complete the Detailed Design of all interfaces with adjoining trades prior to commencement
of manufacture.
b) Ensure that all interfaces are fully co-ordinated prior to commencement.

TYPES OF RENDER

210 EXTERNAL WALL INSULATION SYSTEM K (Adhesively Fixed). SECOND FLOOR EXTENSION PARTYWALLS.

- StoTherm Mineral K - or equal approved. StoTherm MINERAL K. An adhesively fixed externally insulated façade system available with rendered finishes.
For system application details, refer to the corresponding Sto Method Statement before submitting a tender.
Sto Ltd provide a range of external wall insulating systems comprising insulation boards, reinforcing render and decorative finishes.

- Basic System Components for application to blockwork:

Square Edged Insulation Fixing: StoLevell-Uni Adhesive min 5mm thickness.

Sto-Mineral fibre board bedded to substrate with Sto-levell-Uni Adhesive and fixed with insulation dowels at minimum 8 per sqm.
- Sto Armat novo min 5mm thick
- Sto Glass fibre mesh embedded in wet Sto Armat novo
- Sto Armat novo min 5mm thick
- Sto Primer
- Sto Decorative finish

Note: The above are standard products and accessories used with this system. Refer to construction issue drawings for information regarding the requirement for other beads / trims in specific locations.

- Manufacturer: Sto Ltd, 2 Gordon Avenue, Hillington Park, Glasgow G52 4TG. Tel: 0141 892 8000 Fax: 0141 404 9001
  Email: info.uk@stoeu.com
  Web: www.sto.co.uk www.sto.ie

- Latent Defects Warranty
  An insured latent defect warranty covering materials and workmanship is available upon request and where specific project criteria are met.

  - Survey of Existing Walls / Substrates
    To assess the suitability of the substrate prior to commencement of installation, carry out a survey of each elevation of the existing structural substrate.

    - Include the following:
      Condition of substrate.
      Form of the substrate (with particular regard to line / straightness).
      A schedule of repairs necessary to leave the substrate in a suitable condition to receive the system.
      A schedule of services, fixtures and fittings to be either removed or installed to facilitate correct installation of the system.
      A schedule of any extra adhesive / mechanical fixings required in addition to that included in the typical system construction.
      Any other information considered relevant.

- Substrate Preparation:
  Existing substrate should be clean, dry and free of loose coatings, dirt, algae, fungus or deleterious materials etc. Make good as necessary.

- Insulation support rails:
  'K' System: Sto Aluminium horizontal starter track 2m long or Sto-Aluminium Flexicurve starter track 2.5m to radius. Size of aluminium starter track to suit thickness of insulation. Where the installation of an aluminium starter track is not aesthetically acceptable / desirable, install a backwrap detail enabling the render coatings to be applied to the bottom edge of insulation boards at the base of the system.

- Method of fixing:
  Packing shims to be used to overcome surface irregularities in the substrate.
  Sto Levell-Uni adhesive used with EPS insulation. Supplementary dowels may be required – refer to the Method Statement for this specification.

- Insulation:
  Sto Mineral fibre Board

- Insulation – Board Size & Thickness:
  It must be confirmed that board thickness selected achieves overall **U value of 0.28 W/ sq.mK** for entire wall construction.
  Consult with Sto Ltd for details and recommendations.

- Beads/ Trims:
  Sto Aluminium starter tracks. Sto PVC Mesh Angle beads. Sto Armour Angle.
  StoSeal tape compressible waterproof sealing tape.
  Sto StopSeal Bead.
  Sto Movement joint Bead Type 'E'. Sto Movement Joint Bead Type 'V'. Sto Drip Edge bead.
  NOTE: The above are standard items used with this system. Refer to construction issue drawings for information regarding the requirement for other beads / trims in specific locations. Consult with Sto Ltd for recommendations and details.

- Fixings into / through system:
  A range of fixing options is available. Contact Sto Ltd for recommendations and details.

- Reinforcing coat:
  Sto Armat Classic cement-free, fibre-reinforced acrylic reinforcing coat. Thickness to be such to ensure the reinforcing mesh is fully embedded and a level surface is provided. (Minimum 3mm).

- Reinforcement:
  Sto Glass Fibre Reinforcing Mesh. In high traffic, vandal prone and anticipated impact areas additional reinforcement shall be Sto Armour Mesh.
  Areas where Sto Armour Mesh is to be applied shall be clearly defined either within the contract documentation or marked on construction drawings.

- Render / Finish: Stolit cement free acrylic resin render. Thickness: 1.5mm
- Texture: K – Stippled.
- Colour/aggregate: Colour 16004.

DESIGN: Complete the detailed design of the system and associated features shown on the drawings to meet the requirements of this specification.

INTEGRITY:
The installation must be weathertight under all anticipated conditions. Consult with Sto Ltd for specific details and relating to particular conditions.
The installation must be capable of resisting all dead loads and design live loads, including impact and wind loads, and accommodate all thermal movements without damage.
Render systems may not be applied to horizontal or near-horizontal surfaces. To enable the integrity of the system to be maintained at parapets / wall heads, it will be necessary to install copings or cappings. Render systems may not be continued over wall heads / parapets without the provision of suitable protection.

IMPACT LOADING: Resistance to hard body impact and perforation as categorised below shall be:
Category II - 10 Joules using a single layer of Sto Glass Fibre Reinforcing Mesh - and the render shall not be perforated using a 12mm indentor.
Category I - 50 Joules using 1 layer of Sto Armour Mesh + 1 layer of Sto Glass Fibre Reinforcing Mesh - and the render shall not be perforated using a 6mm indentor.
(The standard ETA requirement for impact resistance is based upon impacts using energy of 3 Joules & 10 Joules).
The above categories are defined in the Guideline for European Technical Approval ETAG 004 and correspond to the degrees of exposure in use. They do not include an allowance for acts of vandalism.

310 DESIGN
- Detailed design of system and associated features shown on drawings: Complete to meet requirements of this specification.

350 WIND LOADING
- Characteristic loads: To suit location of installation as drawings.
Wind Loading should be calculated to BS 6399 Part 2. Loading patterns should be subdivided into zoned areas throughout the façade.

TO ENABLE ECONOMIC DESIGN, ACCURATE CALCULATIONS INDICATING NEGATIVE WIND LOADS MUST BE PRESENTED TO STO LTD AT THE EARLIEST POSSIBLE OPPORTUNITY .
Should it be necessary to provide additional mechanical fixings to accommodate wind loads, there will be an additional cost.

360 SAMPLES
- Procedure: Submit samples/ examples of designated items for approval. Keep approved samples on site for the duration of the contract for inspection/ comparison purposes.

- Designated items: Texture to be applied . 1m2 sample panel

380 UNIFORMITY OF COLOUR AND TEXTURE OF COATING MIXES
- Type/ proportion of constituent materials: Unchanged once samples of coatings have been approved.
- Supplies of materials: Sufficient to give consistent and uniform colour and texture.

INSTALLATION

410 INSTALLATION
- Installer: The system manufacturer, or a contractor approved by the system manufacturer.

Installation to be carried out by a contractor registered with Sto Ltd. It is also recommend that the contractor is a member of INCA, The Insulated Render and Cladding Association and subscribe to the INCA guideline that 75% of the work force, whether directly employed or subcontract, have been certified as being competent in the installation of External Wall Insulation Systems, by an INCA approved assessor.
Installation shall be made strictly in accordance with Sto Ltd instructions. Reference should be made to the project specification, method statement, drawings, technical data sheets, and all other relevant literature. Consult with Sto Ltd for latest literature.

420 ADVERSE WEATHER
- Materials/ Surfaces: Do not use frozen materials and do not apply materials to frost bound surfaces.

- Adhesives/ Mortars/ Renders: Do not apply when air temperature is at or below 5°C on a falling
thermometer or below 3°C on a rising thermometer, or when temperature of the air or wall surface is above 30°C and the surface is not protected.

- Temperature of the work: Maintained above minimum level recommended by manufacturer until adhesive/ mortar/ render has fully hardened.

- Newly rendered surfaces: Protected against rain and snow by covering when precipitation occurs.

- Coatings damaged by rain or frost: Replace.

430 CLEANLINESS: Carefully protect all existing work and approaches using suitable boards, sheets, etc. Clean off any droppings from finished work immediately.

440 SUBSTRATES
- Condition before pretreatment/ application of coatings: Structurally sound, adequately true and level, dry, free from contamination by dirt, dust, efflorescence or other deleterious substances, and in a suitable condition to receive specified coatings.

450 ON SITE PULL OUT TESTS ON FIXING PINS
- Objective: To prove suitability of structural substrate and determine size and number of fixings
required.

- Pull out test load: 2 x design load
- Period of notice: 3 working days

460 RENDER THICKNESS GAUGES or other suitable means must be used to ensure the specified coating thickness.

470 CURING: Allow all mortar / render coats and primer coats to dry out thoroughly before applying subsequent coats.
Take all necessary precautions to prevent newly rendered surfaces from drying out too rapidly.

480 HORIZONTAL FIRE BARRIERS: Non-combustible material to BS476:Part 4
Size: Minimum 200mm (or as otherwise described above) x total thickness of external wall insulation.
Install barriers at every floor level above the second storey/beginning of third storey (or below if required) as shown on drawings.
The provision of horizontal fire barriers shall be compliant with Building Regulations and to Building Control approval.
Refer to Sto Standard Details for this system for specific fire barrier design.

VERTICAL FIRE BARRIERS: where required to achieve integrity of fire compartments shall be in non-combustible material to BS476: Part 4. Minimum 200mm wide (or as otherwise described above) x total thickness of external wall insulation, shall be used in a staggered pattern to ensure a band of non-combustible material extending 100mm wide for the full height of the compartment.
The provision of vertical fire barriers shall be compliant with Building Regulations and to Building Control approval.
Refer to Sto Standard Details for this system for specific fire barrier design.

FIRE BARRIER FIXINGS: All Sto Specified fixings to fire barriers to be stainless steel or as otherwise approved by Sto Ltd.
Where the inclusion of such fixings is visible at the face of the insulation, this will introduce a cold bridge and may therefore result in the appearance of light spots in the render finish.

490 CONSTRUCTION/ MOVEMENT JOINTS
- Location: Replicate all movement / expansion / deflection / structural joints within the building structure. Form joints accurately to detail and in locations shown on the drawings. If modifications to any joint location or design are necessary on site, agree revisions with CA before proceeding..

- Formation: Accurately to detail.

- Modifications to joint locations/ design: Agree revisions before proceeding. CONSULT WITH STO LTD TO VERIFY JOINT REQUIREMENT AND TYPE.

500 CONSTRUCTION / CONTRACTION JOINTS: It may be possible – depending upon the degree and direction of movement expected - to extend the system over construction / contraction joints within the building structure.

CONSULT WITH STO LTD TO VERIFY JOINT REQUIREMENT AND TYPE.
Form joints accurately to detail and in locations shown on the drawings. If modifications to any joint location or design are necessary on site, agree revisions with CA before proceeding.

520 SUPPORTS FOR SERVICES/ FITTINGS
- Service/ Fitting: None currently specified for the party wall elevations.
- Notify CA if any fixings become necessary and:
- Type of support: As recommended by the system manufacturer.

530 SEALANT JOINTS
- Locations: At all interfaces between insulation / render and dissimilar materials.

- Sealant:
StoSeal Tape 2D 15/ 2-6, installed thickness 2 – 6mm
OR
StoSeal Tape 2D 15/ 5-12, installed thickness 5 – 12mm.

Sto PVC Stop Beads in conjunction with mastic sealant.
NOTE: Mastic sealants are not generally supplied by Sto Ltd and are not specified in this document. The performance requirements, specification and suitability of mastic sealants must therefore be determined by the contract administrator.

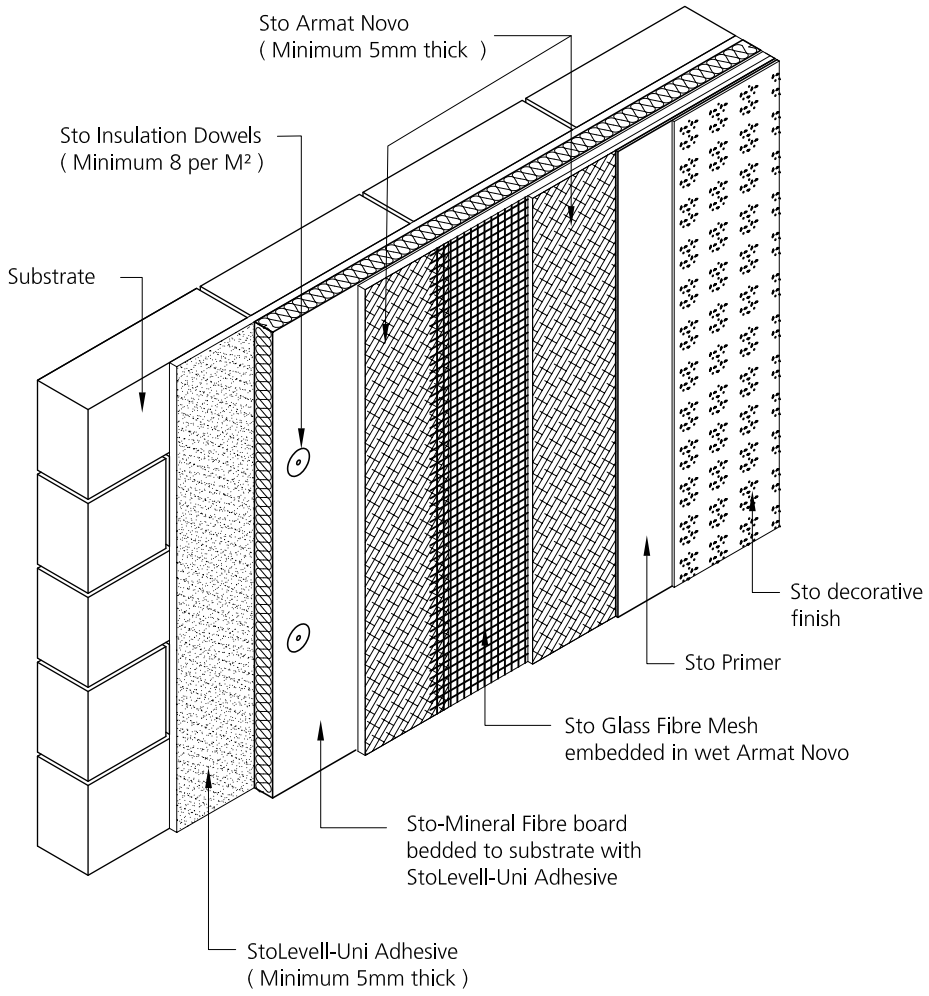
- Joints: Formed in accordance with section Z22 and system manufacturer's recommendations
using any necessary joint fillers, backing strips, etc.

550 INSPECTION OF COMPLETED INSTALLATION

- Timing: As soon as possible after completion of the work and before removing scaffolding.

- Notice for inspection (minimum): 5 working days

- Defects: Report immediately.



Drawn by:	M.SHEPHERD: 23/02/09	StoTherm System
Scale: NTS	Revision date:	

Title:

StoTherm - Mineral K

System Build-Up on Masonry

Notice:
Neighbouring works are represented only schematically. This detail is a proposal which describes the basic function of an EWI System. The detail solution does not result in any liability for the company Sto Ltd. As the specific nature of the project in question was not known, no allowance is made for it in the solution. If necessary, the solution must be modified by a suitably trained Architect / Planner / Contract Administrator / Applicator after examining the project and local conditions as well as all construction law and other rules and regulations (e.g. Fire protection , physical properties, technical principles etc.) Use of this solution does not absolve the Architect / Planner / Contract Administrator / Applicator / User of their duty to examine local conditions and to observe any applicable rules and regulations.

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